

Applic. No. 10/613,198  
Art Unit: 1762**REMARKS*****Disposition of Claims***

Upon entry of the amendments herein, claims 1-13 will remain pending in the application and stand ready for further action on the merits. Independent claims 1, 12, and 13 have been amended herein to recite that the radiation-curable coating is irradiated to form a freshly irradiated coating that undergoes a curing process. An ink-receptive coating is coated over the freshly irradiated coating to produce an ink-jet recording medium. Claims 2-11 are dependent upon claim 1 as amended. These amendments are fully supported by the specification, particularly at pages 17-19. No new matter has been added to the application. Claims 2-11 are dependent upon amended claim 1.

***Objection to the Specification***

The Office Action first objects to the specification, because of the description under the heading, "CROSS-REFERENCE TO RELATED APPLICATIONS." This description now has been corrected, as suggested by the Examiner, to reflect that Application Serial No. 09/863,552 has issued as U.S. Patent 6,610,388 B2. The amendment to the specification is set forth above. In view of this amendment, Applicants respectfully request that this objection be withdrawn.

***Rejection of Claims 1-4, 6, 7, 8, 12, and 13 Under 35 U.S.C. §103(a)***

The Office Action rejects claims 1-4, 6, 7, 8, 12, and 13 under 35 U.S.C. §103(a) as being unpatentable over Miklasiewicz et al., U.S. Patent 6,326,415 ("Miklasiewicz") in view of De Clercq et al., U.S. Patent 5,672,392 ("De Clercq"). It is submitted that the present invention, as recited in amended claims 1-4, 6, 7, 8, 12, and 13, is not *prima facie* obvious over Miklasiewicz in view of De Clercq for the reasons discussed below.

Applicants agree with the Examiner that Miklasiewicz discloses a process for making an ink-jet recording medium including the steps of: applying a UV-curable coating formulation to a substrate such as a latex-coated paper; irradiating the coating with either UV light or e-beam radiation to cure the coating; treating the cured coating with corona discharge; and applying an ink-receiving layer over the cured coating. As

Appl. No. 10/613,198  
Art Unit: 1762

the Examiner points out, the resulting ink-jet recording medium is described as having a gloss greater than 55 at twenty degrees in Example 1. Miklasiewicz, however, does not teach a continuous in-line process for making the ink-jet recording medium.

Concerning De Clercq, this reference discloses a method for making ink-jet recording media which involves applying aqueous coating compositions to a substrate material. The coating compositions are preferably applied to one or both sides of the paper using in-line application machines. The Examiner takes the position that it would have been obvious to modify the process in Miklasiewicz so as to carry out the coating process using the in-line application machines described in De Clercq.

Applicants respectfully submit, however, that even if a person of ordinary skill in the art looked at the disclosure in Miklasiewicz and combined its teachings with the teachings in De Clercq, that person still would have no basis for producing the method as recited in the presently amended claims.

Claim 1 has been amended to clarify that the radiation-curable coating is irradiated to form a freshly irradiated coating that undergoes a curing process. An ink-receptive coating is applied over the freshly irradiated layer. In contrast, the ink-receiving layer described in Miklasiewicz is applied over a fully cured layer. As described in Example 1 of Miklasiewicz, the UV curable formulation is fully cured before applying the ink-receptive coating.

#### Example 1

The formulation of Table 1 was prepared with low shear blending equipment. The 100% solids formulation was then hand drawn down with a #2.3 wire rod (ct. wt. Range 3-4#/msf) and cured with lab radiation equipment utilizing "H" type fusion microwave bulbs. The cured glossy layer was flexible and had the hand of a gelatin type photographic paper. . . . This hand sheet was then coated with an ink jet receiving formulation comprised of a 10% solids gelatin based formulation. (col. 5, lines 44-57).

Applicants have found that the freshly irradiated coating, as it undergoes the curing process, will respond to post in-line treatments differently than a fully cured coating will respond to such treatments. The ink-receptive coating can be applied over

Applic. No. 10/613,198  
Art Unit: 1762

the freshly irradiated coating, and there may be improved adhesion between these coated layers and other beneficial effects as described in the subject specification:

The in-line irradiation of the radiation-curable coating can provide additional advantages. An important advantage relates to chemical interactions between the "freshly irradiated" coating and post treatments. . . . Further, since the "freshly irradiated" coating is not fully cured, molecular motion and transport into and out of the coating tends to be easier. This molecular motion and transport may allow for interfacial blending with other coating layers, and this can be advantageous in improving adhesion, controlling curl of the media, and responding to other external environmental factors such as changes in humidity.

(Page 18, lines 482-489 and Page 19, lines 490-497)

Turning back to Miklasiewicz, there is no disclosure or suggestion in this reference for applying an ink-receptive coating to a freshly irradiated coating having the properties as described in the subject specification. Miklasiewicz only teaches applying an ink-receptive coating to a fully cured coating, and provides no hint or suggestion for applying an ink-receptive coating to a freshly irradiated coating. A person of ordinary skill in the art, looking at the disclosure in Miklasiewicz, would have no basis for modifying the teachings therein in order to arrive at the presently claimed process. Thus, it is respectfully submitted that the combined teachings of Miklasiewicz and De Clercq do not render the presently claimed process as being obvious. In view of the foregoing, it is respectfully requested that the rejection of claims 1-4, 6, 7, 8, 12, and 13 (as amended) under 35 U.S.C. §103(a) be withdrawn.

*Rejection of Claim 5 Under 35 U.S.C. §103(a)*

The Office Action rejects claim 5 under 35 U.S.C. §103(a) as being unpatentable over Miklasiewicz in view of De Clercq and further in view of Iqbal, U.S. Patent 5,208,092 ("Iqbal").

Applicants believe that claim 1 is in condition for allowance for the reasons discussed above. Claim 5 is dependent upon claim 1; thus, it is submitted that claim 5 is also in condition for allowance.

Applic. No. 10/613,198  
Art Unit: 1762

Further addressing the citation of the Iqbal reference, Applicants agree with the Examiner that this reference discloses a transparent recording sheet that can be used with ink-jet printers. A transparent substrate material, e.g., a film, is coated with an ink-receptive layer, and an adhesion-promoting priming layer can be interposed between the transparent substrate and ink-receptive layer. However, Iqbal does not disclose or suggest a continuous, in-line process for making an ink jet recording medium, wherein an ink-receptive coating is applied over a freshly irradiated coating as presently claimed. Accordingly, it is respectfully requested that the rejection of claim 5 under 35 U.S.C. §103(a) be withdrawn.

*Rejection of Claims 8-11 Under 35 U.S.C. §103(a)*

The Office Action rejects claims 8-11 under 35 U.S.C. §103(a) as being unpatentable over Miklasiewicz in view of De Clercq and further in view of Nemoto et al., European Patent EP 0 770 493 B1 ("Nemoto").

Applicants believe that claim 1 is in condition for allowance for the reasons discussed above. Claims 8-11 are dependent upon claim 1; thus, it is submitted that claims 8-11 are also in condition for allowance.

Further addressing Nemoto, this reference discloses an ink-jet recording material made from a substrate sheet coated with a radiation-cured resinous layer and an ink-receiving layer that overlays the radiation-cured resinous layer. Nemoto discloses that the ink-receptive layer may contain a water-soluble binder such as poly(vinyl alcohol), and the amount of each ink-receptive and radiation-cured layer in the structure may be in the range of 5 to 50 g/m<sup>2</sup>. However, Nemoto teaches a process for making the ink-jet recording medium which is entirely different than the continuous, in-line process of the instant invention. More particularly, Nemoto describes a cast-coating process which involves first coating the radiation-curable resinous layer on a casting member such as a metal plate. Then, the coating is irradiated to cure the resinous layer. The resulting radiation-cured resinous layer is separated from the casting metal plate and transferred to the substrate. (See Paragraph 0037 and Example 1).

Nemoto clearly does not disclose or suggest a continuous, in-line process for making an ink jet recording medium as claimed by Applicants. In view of the foregoing,

Appl. No. 10/613,198  
Art Unit: 1762

it is respectfully requested that the rejection of claims 8-11 under 35 U.S.C. § 103(a) be withdrawn.

***Conclusion***

In summary, Applicant submits that all of the claims presented for consideration herein are patentable and each of the Examiner's rejections and objections has been overcome. Accordingly, Applicant respectfully requests favorable consideration and allowance of claims 1-13 (as amended).

The Commissioner is hereby authorized to charge any additional fee required in connection with the filing of this paper or credit any overpayment to Deposit Account 02-0900.

Should there be any outstanding matter that needs to be resolved in the present application, the Examiner is invited to contact the undersigned at the telephone number provided below.

Respectfully submitted,  
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